



# **Joint Expeditionary Collective Protection (JECP) Family of Systems (FoS)**

**Joint Committee on Tactical Shelters  
3 November 2009**

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# JECP Capability

- JECP Family of Systems (FoS) will collectively protect Joint Expeditionary Forces personnel, assets and infrastructure in a Chemical and Biological (CB)/Toxic Industrial Material (TIM) contaminated environment.
- The JECP FoS will be smaller, lighter in weight, easier to transport, erect, strike and operate compared to fielded Collective Protection systems.



# FoS Overview

- CP Tent Kits
  - A lightweight, easily maintained, assembled and disassembled CP capability added to selected fielded tents
- CP Structure Kits
  - One or more approaches to render an enclosed space of opportunity collectively protected
    - Improved Host Structure
    - Unimproved Host Structure\*
- Standalone Shelter Systems
  - Collectively Protected shelter system which is self contained, lightweight, easily transported, erected, and struck.
  - Must be available in various sizes (man-portable, small, medium and large configurations) to meet differing mission requirements
    - Man-portable (2 personnel)
    - Small (6-8 personnel)
    - Medium\* (12-20 personnel)
    - Large (20+ personnel)

**\* The Unimproved Structure Kit and Medium Standalone shelter will use the same design**

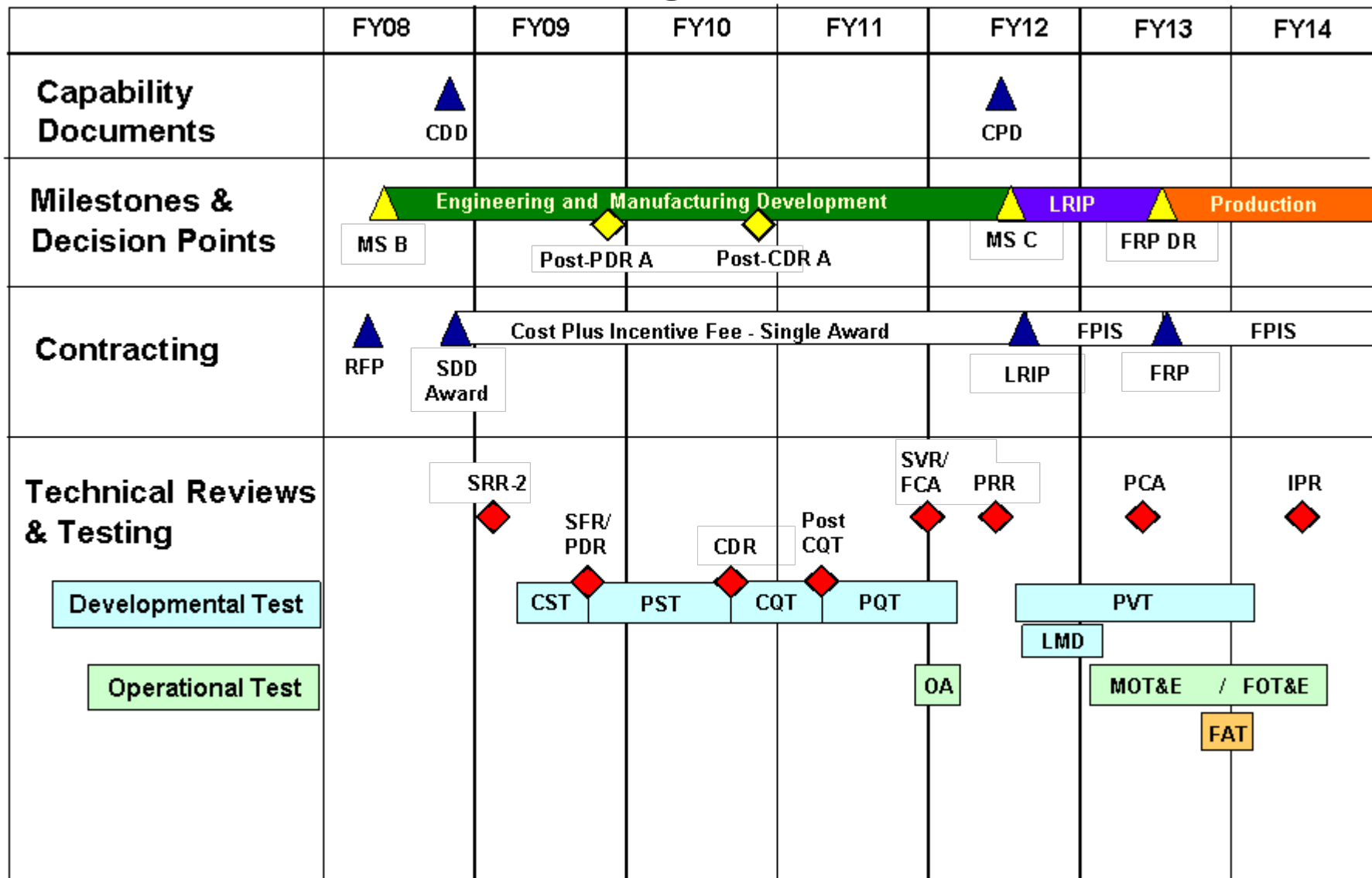


# Accomplishments

- Tailored Analysis of Alternatives, FY06-FY07
- Conducted Technology Demonstrations, FY06-FY08
- Conducted Limited Objective Experiment, Apr 07
  - Evaluated & Updated Tactics, Techniques, and Procedures
- Successful MS B Decision Review, Mar 08
- Contract Award to SAIC, partnered with Production Products (PPSTL), Aug 08
- Follow-on System Requirement Review, Oct 08
- System Function Review & Preliminary Design Review, Jun 09
- Post-Preliminary Design Review Assessment, Sep 09



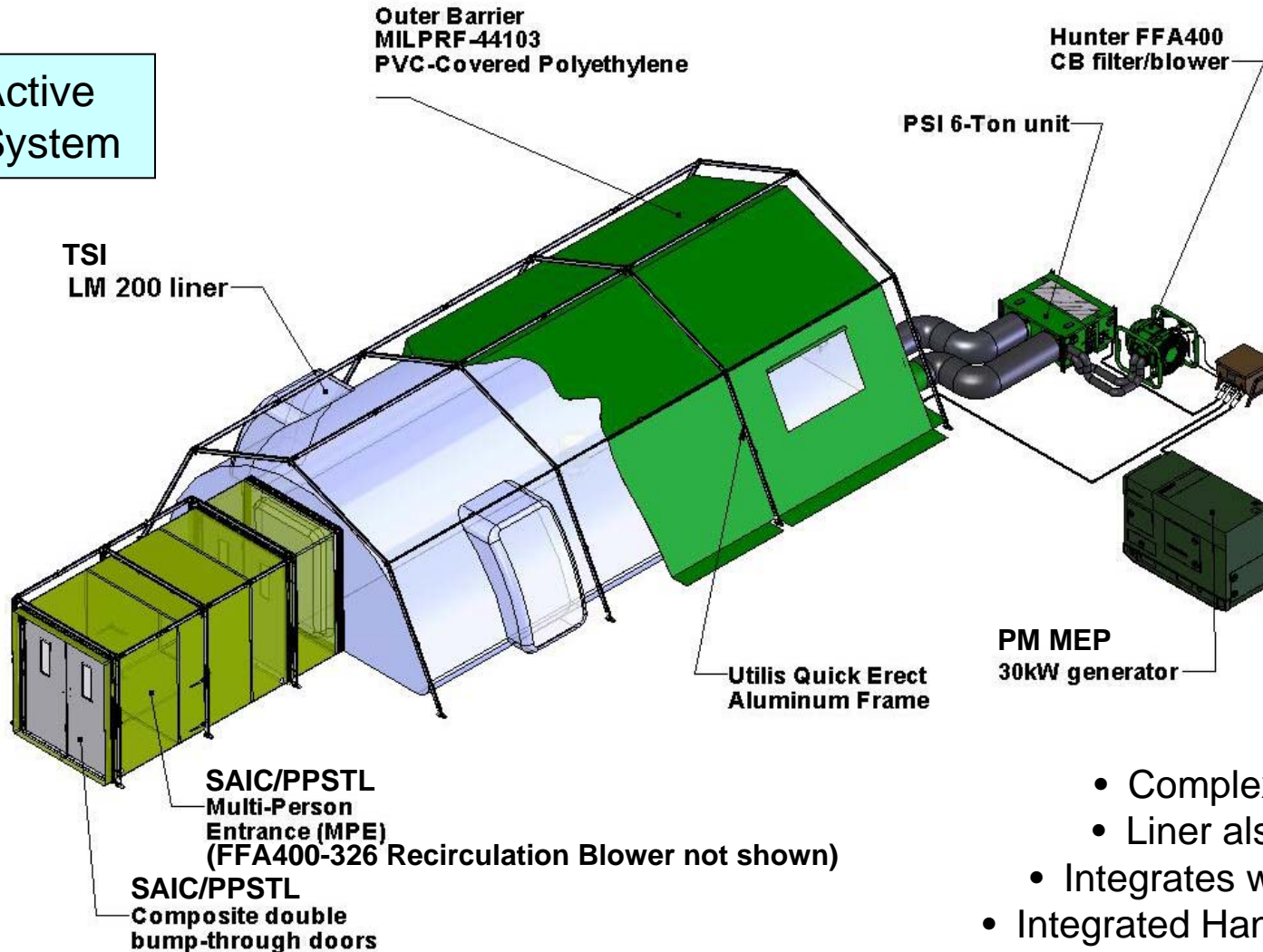
# JECP Program Structure



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# Standalone Large System

Active  
System



SAIC  
Preliminary  
Designs

## Key Features:

- Complexes on Four Sides
- Liner also used in Tent Kit
- Integrates with SPE and MPE
- Integrated Hanging Mechanisms



# Tent Kits

3 configurations

Active  
System

SAIC/PPSTL  
Single Person  
Entrance (SPE)

Deployment  
straps

SAIC/PPSTL  
Composite double  
bump-through doors

Organic ECU

Coaxial ducts

TSI  
LM200 liner

Hunter FFA400  
CB filter/blower

Organic Generator

SAIC  
Preliminary  
Designs

Key Features:  
Complex on 4 sides  
Integrated Hanging Mechanisms  
Integrates with SPE and MPE  
TSI LM200 Liner Material  
Meets CB barrier requirements

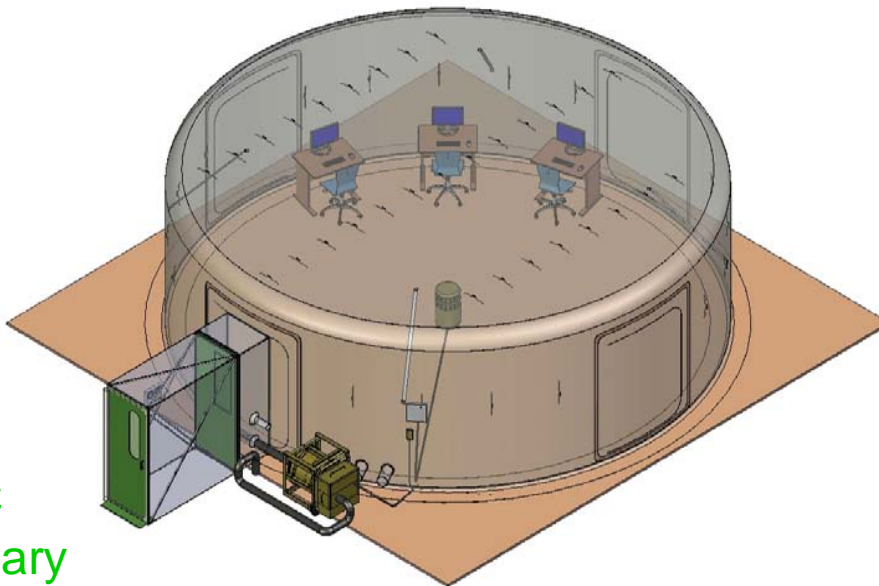
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# Structure Kit – Improved

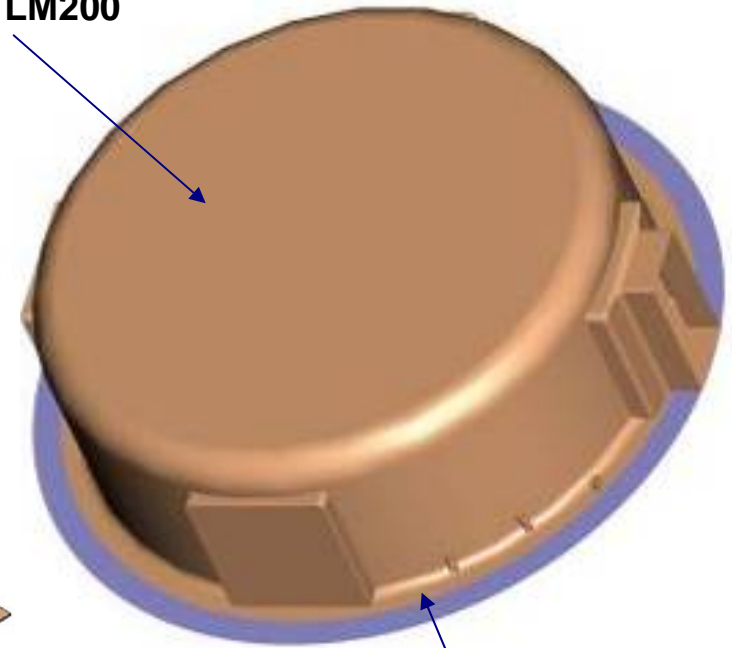
## Key Features:

- Floorless Design with Non-Destructive Anchor
  - Preserves Infrastructure, Including Furnishings and Stationary Equipment
- Frameless Design
- Complexes on Four Sides
- Integrates with SPE and MPE
- Integrated Hanging Mechanisms



SAIC  
Preliminary  
Designs

TSI LM200



Active  
System

PPSTL Non-  
Destructive Anchoring  
System (Vacuum Seal)

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# Standalone Medium and Structure Kit – Unimproved

## Key Features:

- Single Skin CB Barrier Fabric with Integrated Blackout Capability
- Integrated Hanging Mechanisms
- Integrates with SPE and MPE
- Complexes on Two Sides
- Single solution 2 systems

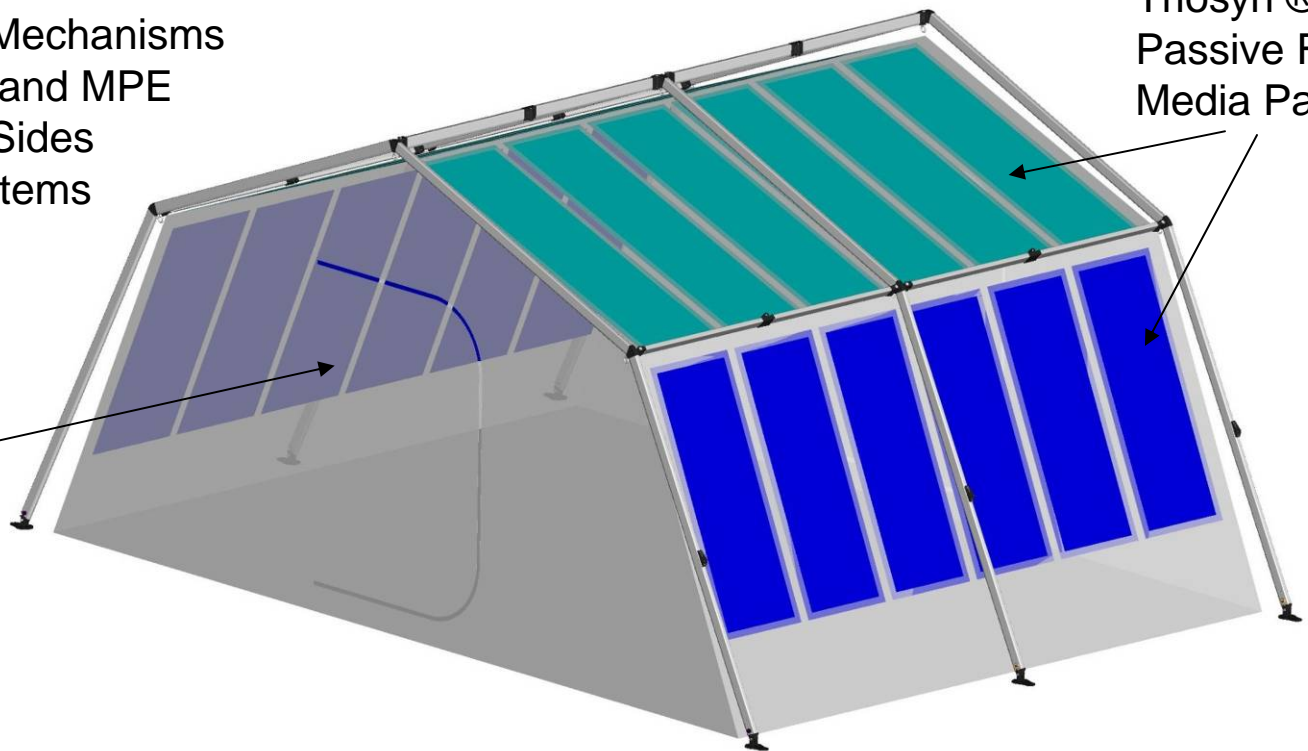
Uses a Modified Utilis TM-24 or wall anchor in a cave

Triosyn ® Passive Filter Media Panels

C-Zipper Door

SAIC  
Preliminary  
Designs

Passive  
System

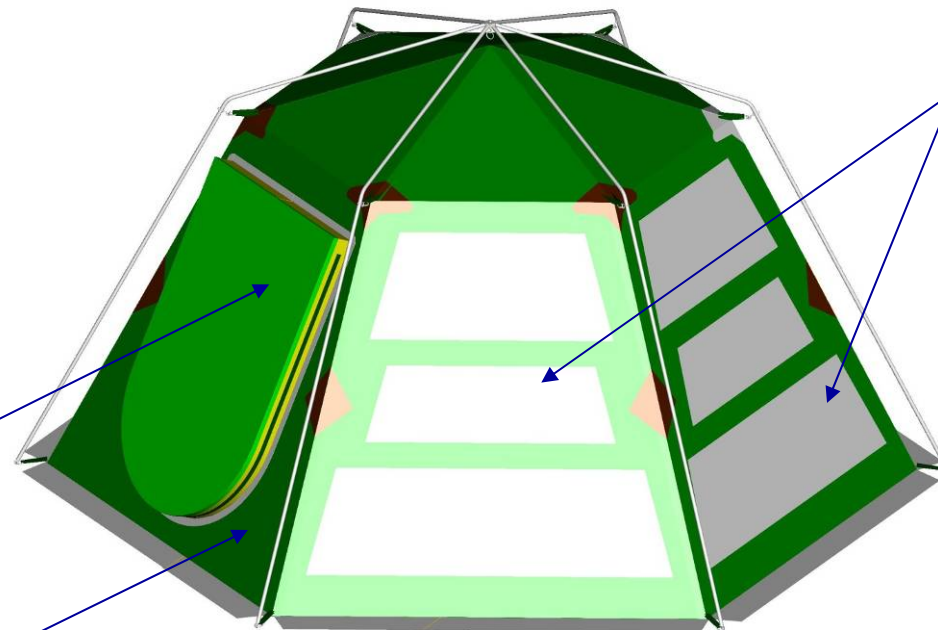


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# Standalone Small

## Key Features:

- Single Skin CB Barrier Fabric with Integrated Blackout Capability
- Integrated Hanging Mechanisms



Triosyn ®  
Passive Filter  
Media Panels

SAIC  
Preliminary  
Designs

U-Zipper Door

Port for external power  
and communication lines

Passive  
System

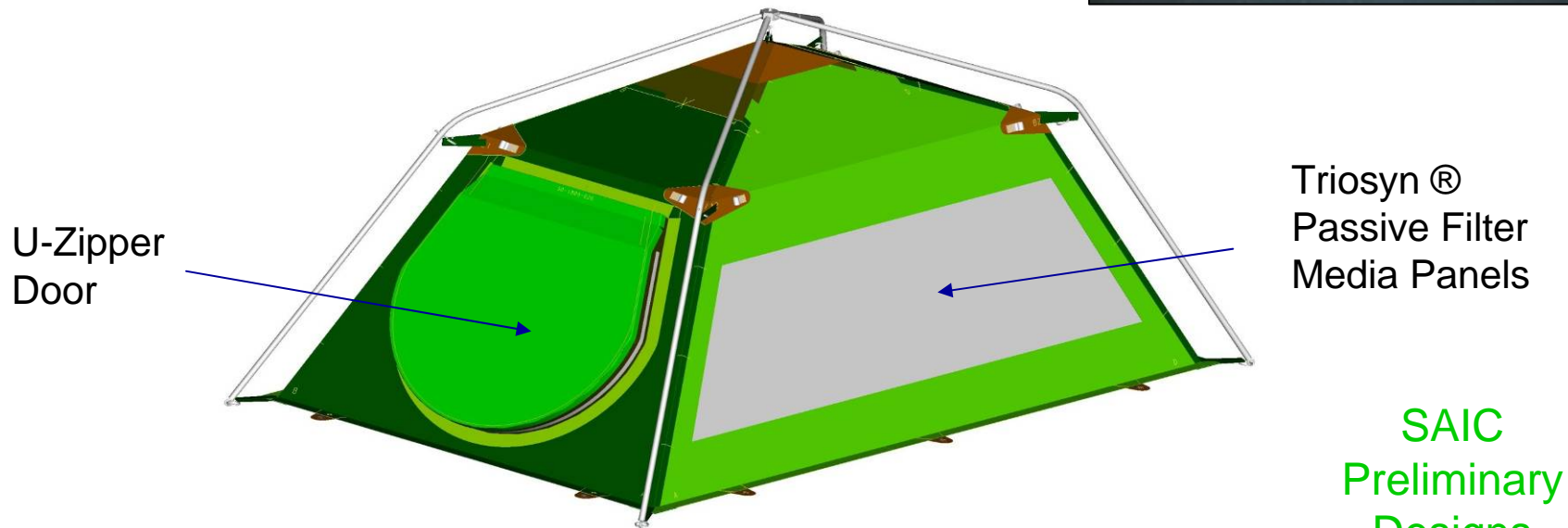
Note: Roof filter panels removed for weight considerations. Effective CO<sub>2</sub> removal of new design has been successfully modeled.

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# Standalone Man-Portable

## Key Features:

- 3/4-inch Aluminum Frame
- Single Skin CB Barrier Fabric with Integrated Blackout Capability



SAIC  
Preliminary  
Designs

Passive  
System

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# Trade Studies & Technical Challenges

- Standalone Large liner vice single skin solution
  - Future Increment
- USMC CAPSET III Tent Kit integration
  - Single piece liner vice multiple piece liner
  - Current Generator and ECU Trailer (GET) not compatible with collective protection
  - Future Integrated ECU and generator (ITEG) II: coordination to ensure compatibility



# Trade Studies & Technical Challenges (continued)

- Tent Kit liner attachments (simulate 30 strike/erect cycles with 100 lb weight) and hanging mechanisms (24-hour duration with 100 lb weight)
  - Web buckle meets requirements but not User friendly
  - Arrowhead does not meet requirements
- Closure mechanism options for entry/exit and complexing
  - Must be Berry amendment compliant (domestic source)
  - Evaluated impermeable/gas tight zippers; problems with teeth breaking on radius turn and straight sections
  - Heavy gauge zippers with liquid cover flaps like on CBPS; raised lip (liquid intrusion prevention) creates tripping hazard
  - Magnetic seals future possibility if ruggedized
  - Next generation of hook and pile fasteners future possibility if issues with durability/leakage are resolved
  - Others?